



UNIONE EUROPEA



REPUBBLICA ITALIANA

Council Regulation (EC) No 199/2008 of 25 February 2008
concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy

Commission Regulation (EC) No 665/2008 of 14 July 2008
laying down detailed rules for the application of Council Regulation (EC) No 199/2008

Commission Implementing Decision (EU) 2016/1251 of 12 July 2016
adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019

Italian Work Plan for data collection in the fisheries and aquaculture sectors

2018-2019

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SECTION 1: BIOLOGICAL DATA

Pilot Study 1: Relative share of catches of recreational fisheries compared to commercial fisheries

General comment: This Box fulfills paragraph 4 of Chapter V of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (a) of this Decision.

1. Aim of pilot study

According to EU Reg. 199/08, “recreational fisheries’ means non-commercial fishing activities exploiting living aquatic resources for recreation or sport”. This definition will be considered for the aim of the present pilot study.

A ministerial decree of 6 December 2010, aimed at promoting the recognition of the consistency of the sport and recreational fishing in the sea, states that “all those wishing to go fishing in the sea will have to make a communication to provide some basic information such as names and addresses, the type of fishing practiced and the fishing areas”. These communications are stored in a database managed by the Ministry of Agricultural, Food and Forestry Policies (Mipaaf) and will constitute the “universe” for the pilot study.

Although marine recreational fisheries are a very popular activity in Italy, with a total number of registration of more than 1 million units (according to ministerial decree 6 Dec. 2010), only partial statistical programmes are in place for the estimation of its landings and economic impact.

The main aim of the pilot study is to assess the share of catches from recreational fisheries in relation to commercial catches for all species for which catch estimates are required under this work plane. The final outcomes of the pilot study will be discussed at marine region level and will allow the definition of the design and the extent of future national surveys of recreational fisheries.

Other objectives of the pilot study are: a) to determine the number of recreational fishermen, cross-checking and integrating the current list of registered fishermen; b) to monitor fishing activity in terms of gears/equipment used and time dedicated to this activity; c) to collect some basic information on recreational catches (species, weight and number); d) to collect macro-data on the overall economic impact of the activity.

2. Duration of pilot study

The pilot study will be implemented in 2017 and 2018.

Results will be available by the end of 2018 and will be presented and discussed at regional level.

3. Methodology and expected outcomes of pilot study

The pilot study will be implemented into two different steps.

The first step will aim at validating the official database of recreational fishermen registrations managed by Mipaaf and established under ministerial decree of 6 Dec. 2010. During this step a screening survey will be

conducted with the following objectives:

- o Characterization of the population
- o Estimation of the number of units per category

The ministerial database will be validated and cross-checked with additional information collected through an ad hoc field survey along the Italian coast.

Once the population of recreational fishermen is set up and defined, the second step will aim at estimating the following parameters:

1. activity per category (number of fishing trips and fishing days)
2. volume of landings and composition by species
3. additional independent data on catches, size and composition of fish caught by recreational fishermen
4. macro-data on the overall economic impact of the activity.

The data collection methods will follow a mixed strategy that will consist of:

- Probability sampling: stratified random sampling without replacement, where each sample unit will be chosen randomly from the population, for parameters 1&2 of the previous list (activity per category and volume of landings and composition by species).

The population will be based on the list of registered fishermen, validated and completed through the field survey (step 1). All selected recreational fishermen will be contacted through mail and telephone calls and requested to compile a questionnaire on activity and catches. The questionnaire will be designed in the form of a mobile application for Android and iOS operating systems. The design of the questionnaire will follow the guidelines and glossary developed by the ICES WGRFS.

- Non-probability sampling: where the sample units will participate to the survey on a voluntary basis, for parameters 3&4 of the previous list (additional independent data on catches, composition of fish caught by recreational fishermen and macro-data on the overall economic impact of the activity). This small-scale 'on site' sampling program will be defined in a way that ensures representative coverage of the target population and minimizes bias.

Both data collection methods will be implemented following guidelines for good practices documented by experts groups (WGRFS, Eurostat).

The final results of the pilot study will be presented in a scientific report, with a complete description of methodologies applied and in a set of tables with complete estimates according to the main objectives of the pilot study. Final estimates will be accompanied by quality indicators related to bias and precision, according to the Quality Assessment Tool (QAT) developed by the WGRFS.

(max 900 words)

SECTION 1: BIOLOGICAL DATA

Text Box 1E: Anadromous and catadromous species data collection in fresh water

General comment: This Box fulfills paragraph 2 points (b) and (c) of Chapter III of the multi-annual Union programme and Article 2 of this Decision.

Method selected for collecting data.

In Italy, 9 EMUs have been identified according to Eel Regulation (EC 1100/2007).

The monitoring and management of these EMUs are decentralized, as, according to national law, administrative regions are in charge for monitoring and management of internal waters. Access to freshwater areas/ rivers would need to engage in discussions with regional administrations that should provide data.

This module for the monitoring of anadromous and catadromous species in Italy, and specifically eel, for the period 2017-2019, is planned as a pilot study, and the definitive monitoring scheme will be put in place only at the end of the period. In the first year, 2017, two EMUs will be involved, as a first hypothesis EMU_LAZ and EMU-PUG because representative the first of the Thirrenian side and the second of the Adriatic side, for both environmental features and organisation of the eel EMUs. For each, the most representative habitat typology will be chosen according to the setting up of the Italian Eel Management Plan, as a first hypothesis a estuary/low river system in the EMU_LAZ and a coastal lagoon in the EMU_PUG. Details will be defined in the course of the first year. The methodology for the monitoring, and the protocol will be put in place and tested, also on the basis of previous experiences of monitorings carried out in the past for the necessities of the assessment for art.9 of EC Regulation 1100/2007. In the following years, the methodology will be tested and extended progressively to other EMUs, integrating and coordinating the various levels of intervention, both administrative and methodological.

(max 250 words per Area)

SECTION 1: BIOLOGICAL DATA

Pilot Study 2: Level of fishing and impact of fisheries on biological resources and marine ecosystem

General comment: This Box fulfills paragraph 3 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (b) of this Decision.

Activities under EUMAP 3 a): incidental by-catch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements

Following the 2017 Recommendation of the RCG Med&BS on pilot studies for the assessment of incidental catches of birds, mammals, reptiles and fish, Italy will follow the planned monitoring programme of the GFCM on the incidental catch of vulnerable species, and carry out the following pilot studies:

- 2018: Pilot study for assessing incidental catches of vulnerable species from bottom trawlers
- 2019: Pilot study for assessing incidental catches of vulnerable species from longlines

The guidelines for monitoring incidental catch of vulnerable species and processing the collected data, will be based both on the outputs of the EU MARE/2014/19 project for the Med&BS, and the GFCM guidelines on incidental catch (under preparation). Data to be collected will include: identification of species, number and weight (when possible) of individuals, gear specifications, location and timing of catches.

Activities under EUMAP 3 b): Data to assist in the assessment of the impact of fisheries in Union waters and outside Union waters on marine habitats

Ecosystems are spatially heterogeneous and spatial patterns and processes are important to ecosystem structure and function, whereas the distribution of fishing activities depends on the distribution of the targeted resource. Mediterranean regulations very often have a spatial component explicitly through time and area closures. Spatial management tools are used to protect spawning aggregations, to reduce bycatch, or to meet other single-species objectives. Therefore, it is essential to provide ecosystem indicators for spatial effort to define and to evaluate management measures.

Within the Italian WP, the following ecosystem indicators for spatial effort will be estimated:

- “Distribution of fishing activities”. It will be based on the total area of grids (3 km x 3 km) within which VMS records were obtained, each month. This indicator will apply MCDA (Multi-Criteria Decision Analysis) to estimate the contribution of the small-scale fisheries, attempting to provide an overall representation of fishing effort.
- “Swept area of fishing activities”. It will be based on assessment of fishing effort by the total monthly swept area with respect to the 3 km x 3 km grid, for the portion of the fleet equipped by VMS and/or AIS.

- “Aggregation of fishing activities”. It will be based on the total area of grids (3 km x 3 km) within which 90% of VMS records were obtained, each month.
- “Gini’s Index of the fishing pattern”. It will be represented by the value of the Gini’s index computed, at a monthly scale, on the fishing effort pattern (hours of fishing per cell) returned within the computation of the indicators 5.
- “Areas not impacted by mobile bottom gears”. Indicator of the area of seabed that has not been impacted by mobile bottom fishing gears in the last year. It will be computed also at a monthly scale.
- “Substrates not impacted by mobile bottom gears”. Indicator of the area of seabed that has not been impacted by mobile bottom fishing gears in the last year with respect to the type of sea bottom substrates (fishing effort will be mapped on substrates distributions) and or bathymetric stratum (0–20m, 20–50m, 50–80m, 80–130m, 130–200 m, 200–500 m, 500–800 m, 800–1000 m, > 1000m). It will be computed at both annual and monthly scale.

The proposed ecosystem indicators will provide estimations and distribution of spatial effort. In order to assess the impact of fisheries on marine habitats, the proposed indicators will be combined with habitat information. To this aim, the seabed habitats mapped within the EMODNET project will be used (<http://www.emodnet.eu/seabed-habitats>). Methodological details are available on: <http://dcf-italia.cnr.it/main/docs/14>.

Activities under EUMAP 3 c): Data for estimating the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems

1. *Aim of pilot study*

Chapter III.3.C the new EU Dec. 1251/2016 specified that “Data for estimating the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems, such as effects on non-commercial species, predator-prey relationships and natural mortality of fish species in each marine region”, should be collected. Following this issue, the general objective of the pilot study will be to increase the knowledge on predator-prey relations, which are needed for multi-species stock assessments.

2. *Duration of pilot study*

The pilot study will be implemented in 2018 and 2019, following suggestions from RCGs in order to share tasks among Mediterranean MSs. In 2018 methods and approaches will be defined and tested. In 2019 the pilot study will continue with data collection activities and data analysis.

Results will be available by the end of 2019 and will be presented and discussed at regional level. Thereafter, based on the outcomes of this pilot study, Member States will determine future data collection specific coordinated at marine region level and based on end-user needs.

3. *Methodology and expected outcomes of pilot study*

The methodology to implement the pilot study will be based on the one already proposed in the EU Project “Strengthening regional cooperation in the area of fisheries data collection in the Mediterranean and Black Sea” (AGREEMENT NUMBER – MARE/2014/19 -SI2.705484).

The sampling program will take into account the following criteria (strata), which are known to influence the diet of the investigated species: size class and season.

Stock, fisheries to be monitored, sources of information (i.e. commercial fisheries, surveys) and the exact data to be collected (i.e. number of specimens) will be identified at Regional level in 2017 and in consultation with the relevant end users in the region.

The final results of the pilot study will be presented in a scientific report, with a complete description of methodologies applied (including collection of samples, removal of the stomach contents, identification of the prey items and treatment of the data collected) together with protocols and guidelines for sampling, processing and analyzing the stomach contents.

(max 900 words)

SECTION 1: BIOLOGICAL DATA

Text Box 1G: List of research surveys at sea

General Comment: This Box fulfills Chapter IV of the multi-annual Union programme and Article 2 and Article 7 paragraph (3) of this Decision. It is intended to specify which research surveys at sea set out in Table 10 of the multi-annual Union programme will be carried out. Member States shall specify whether the research survey is included in Table 10 of the multi-annual Union programme or whether it is an additional survey.

MEDITS SURVEY (mandatory survey)

1. Objectives of the survey

The MEDITS programme aims to conduct co-ordinated bottom-trawl surveys Mediterranean. This bottom trawl survey derives from an EU project started in 1994 at European Mediterranean level (Bertrand et al., 2002), in which all the participants use the same gear, the same sampling protocol and the same methodology. The challenge of MEDITS survey is to provide data useful for describing and quantifying changes in the fish populations, through indices of demography, mortality, spatial occupation, biological traits, thus contributing to the routine stock assessments and the development of management advice tools. One survey should be carried out every year, during spring and beginning of summer.

2. Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)

Overall, MEDITS data shall be processed and analysed in line with the data collected according to the common protocol (MEDITS-Handbook. Version n. 8, 2016), to produce information (i.e. population distribution, abundance, size composition etc.), on benthic and demersal species found in an area with a depth ranging from 0 to 800 m within the seas adjacent to Italy (in Fig. a) the 7 GSA are reported). The working zone (on the continental shelves and along the upper slopes) has been adopted to cover at best the distribution areas of the main exploited or potentially exploitable species, considering the administrative and technical constraints of the project.

The stations will be distributed in each of the 7 GSA applying a random stratified sampling scheme using as strata the geographical combination of zones and depth. About 670 hauls should be carried out during each annual survey.

In order to improve the quality of the MEDITS data and the consistency of the information collected a routine (RoME, Bitetto et al., 2015) has been developed for common use, which rationale has been incorporated in the checks made at JRC level during the data upload and the assessment working groups (STECF-EWG). Regarding the data storage, the FishTrawl webapp (a software system for data input, analysis, import/export, storage, checks), designed for scientific trawl survey data as MEDITS was completed, tested and it is available for common use.

3. For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey

Since 2001, the European countries bordering the Mediterranean Sea are obliged to carry out Medits surveys yearly in the framework of the EU data collection regulation. Up to now ten Mediterranean EU countries (Italy, France, Spain, Croatia, Greece, Malta, Slovenia, and Cyprus) collaborated in the project and permanent links are maintained with relevant bodies (i.e. RCMMed&BS and GFCM).

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

Targets number of hauls, by area and participating countries, are reported in the Annex III of the Medits Handbook (Version n. 8, 2016, MEDITS Working Group: 177 pp.).

5. Explain where thresholds apply

No threshold.

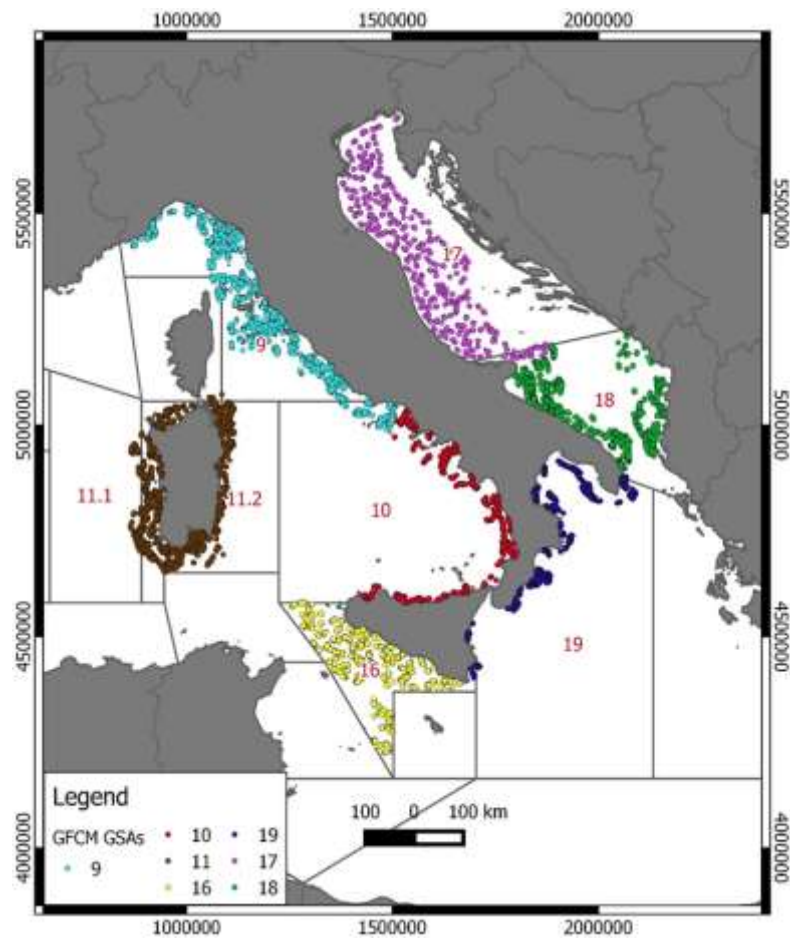


Figure a) MEDITS fishing hauls foreseen in the 7 Italian GSA

MEDIAS SURVEY (mandatory survey)

1. Objectives of the survey

The Pan Mediterranean Acoustic Survey (MEDIAS) has been carried out annually since 2009 in order to assess the abundance and spatial distribution of small pelagic species (anchovy - *Engraulis encrasicolus*, and sardine - *Sardina pilchardus*), in the Mediterranean Sea by means of acoustic methodology. Demographic structure and species composition of the pelagic populations has been derived also from pelagic trawls in order to evaluate the abundance and biomass per age, size and sex.

2. Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)

This research will be based on common protocol (MEDIAS-Handbook, 2013) and will follow a multidisciplinary approach. Synoptically with the acoustic data acquisition, carried out using a multifrequency scientific echo sounder system properly calibrated each year, net samplings on small pelagic fish should be performed by means of a pelagic trawl (Tables 1.G, H)

The aim is to determine species and size composition of the pelagic biomass (fish sampling is required to collect representative samples of the population from a qualitative point of view and not a quantitative point of view, as is the case of demersal surveys). Length frequency distribution of all the caught fish species will be recorded. Age samples of *E. encrasicolus* and *S. pilchardus* will be collected and analysed. Analysis of acoustic data will be conducted by means of dedicated software for echograms scrutinization.

Further, for an ecosystem based approach environmental monitoring will be performed, thus CTD oceanographic data (temperature, salinity, fluorescence and dissolved oxygen) will be recorded.

3. For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey

The MEDIAS acoustic survey, performed in spring-summer, should cover a series of areas in the Mediterranean EU MS (Spain, France, Croatia, Italy, Slovenia and Greece) with a standardised methodology. Italy will cover:

- a) Adriatic Sea (GSA 17 and 18; FAO Sub-Divisions 37.2.1 and 37.2.2) – Fig. b)
- b) Tyrrhenian Sea (GSA 9 and 10; Sub-Division 37.1.3) – Fig. c)
- c) Sicilian Channel (GSA 16; FAO Sub-Division 37.2.2) – Fig. d)

Concerning the MEDIAS database, in 2016 the Steering Committee has revised the format of existing databases related to acoustic surveys per study area and MEDIAS partners (AcousMed project, Contract MARE/2009/09 SI2). The aim is the proposal of a common database that will serve the needs of acoustic surveys in order to fulfil DCF requirements and standardize the output of surveys estimations.

Concerning the availability of data, the reference period will be one year. For MEDIAS surveys, as agreed at regional level (RCMMed&BS Final Report, 2016), the results pertaining to the reference period (n) will be ready at the end of March of the year after (n+1).

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

The geographical areas that will be covered by the MEDIAS surveys and the respective days at sea per participating countries are reported in Table 1 of the Medias manual (MEDIAS-Handbook, 2013).

5. Explain where thresholds apply

No threshold.



Figure b) Acoustic survey in the Adriatic Sea: GSA 17

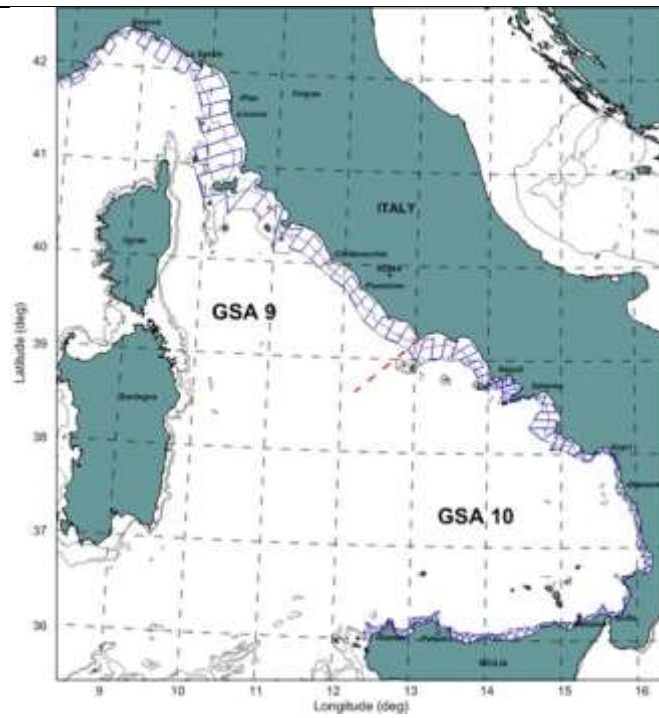


Figure c) Acoustic survey design in the GSAs 9 and 10; Sub-Division 37.1.3.

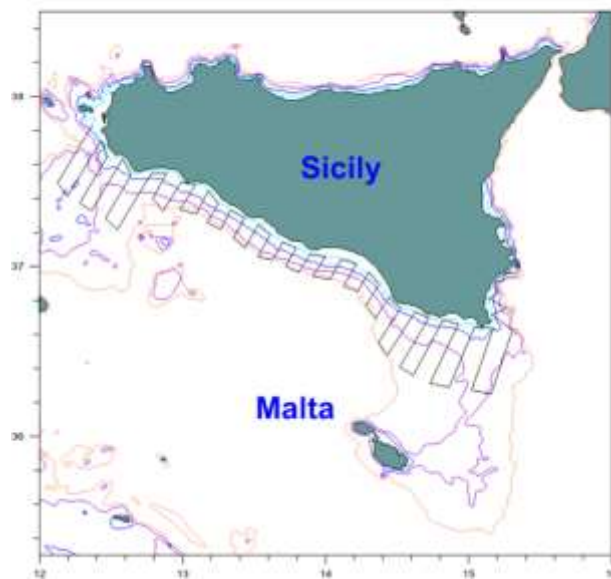


Figure d) Acoustic survey design in the GSA 16; FAO Sub-Division 37.2.2.

SoleMon survey (non mandatory survey)

1. Objectives of the survey

Solea solea is an important resource in the GFCM area. About 22% of the GFCM landings of soles comes from the Adriatic Sea. In the GSA 17 soles are targeted by “rapido” trawl and set nets, that amount to around 500 boats, for a total of 1,600 fishermen and an annual value of landings of around 40 million Euros.

The main survey objectives are:

- a) Assessing abundance and distribution in GSA17 of sole and other important demersal resources by surveys with “rapido” gears suitable to seize flatfish and other benthic animals.
- b) Pursuing the studies on the ecosystem impact of the “rapido” trawl fishery.
- c) Finally, since the new CFP is going to be more and more integrated in the EU maritime policy context [COM(2009)163 final], the data, will also contribute to the setting of the GES and targets for the Adriatic Sea in the framework of an ecosystem approach. Thus matching to the requirement of the implementation of the MFSD [DIRECTIVE 2008/56/EC].

2. Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)

The survey should cover sole presence within the GSA 17 that, according to the genetic information pertains as a single stock (Figure e). All this holds also for benthic fish and shellfish of commercial interest, including rays and other selachians, since EU greatly focuses on such vulnerable resources. Survey should be carried out based on the protocol used since 2005 (SoleMon Survey – Instruction Manual - Version 2, May, 2011) and utilising the same gear. The gear is a modified beam trawl named as “rapido” trawl, and should be appositely planned to fish on different types of bottom. The research vessel should utilize two gears simultaneously in each haul.

3. For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey

As sole stock is shared among Italy, Slovenia and Croatia in GSA 17, we assume that the stock’s exploitation rate will increase in the next future, due to the foreseen development of the fishing sector in the States of Eastern Adriatic Sea, with a potential risk of overexploitation. Data will be shared in WGs, both at EU and Mediterranean level, and with all member States of AdriaMed through common database AtrIS.

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

Targets number of hauls, by area and participating countries, are reported in the Solemon Manual (SoleMon

5. Explain where thresholds apply

No threshold.

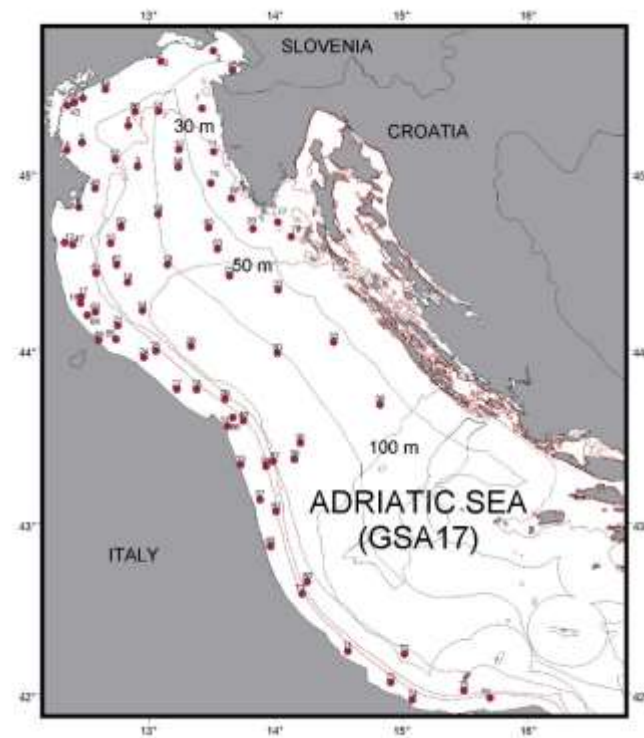


Figure e) SoleMon fishing hauls foreseen in the Adriatic Sea (GSA 17)

DREDGERS MOLLUSCS SURVEY (DRES) (non-mandatory survey)

3. Objectives of the survey

Concerning hydraulic dredges for striped venus clam (*Chamelea gallina*) two management plans have been adopted in Italy through the Ministerial Decree of 24/07/2015 and the EC Regulation (EC) 2016/2376 (discard plan). Both plans highlight the need to conduct a standardized annual survey (scientific survey), aimed at assessing the state of the resource and the effectiveness of the technical measures adopted. In the central Tyrrhenian Sea and in the North Adriatic the hydraulic dredges also target the razor clam *Ensis minor*. This specie is usually caught within 0.3 nm from the coast at a maximum depth of 4-6 m.

Scientific surveys will be conducted to assess the spatial distribution of the two species. Information from surveys combined with those from commercial data (landings) are necessary for stock assessment and to define the reference points of management plans. The main biometric measurements (length and weight) will be recorded for the two species. Additionally, biological information (sex ratio, maturity, length-weight relationship etc.) will be collected for the striped venus, which has a minimum conservation reference size (22 mm).

4. *Description of the methods used in the survey. For mandatory surveys, link to the manuals. Include a graphical representation (map)*

The recent surveys have been conducted following operating standard protocol used on a national scale. A specific survey manual will be prepared in 2018 according to this protocol. Commercial vessels will be used to conduct the surveys. The commercial hydraulic dredge used to harvest *C. gallina* and *E. minor* are similar and will comprise a rectangular cage 3 m wide, weighing 0.6 t, mounted upon two sledge runners. The cage is connected to a hose, which serves to eject water under pressure from the nozzles at the mouth of the dredge and inside the dredge cage. Surveys for *C. gallina* will be carried out in the 13 marine compartments in the Adriatic Sea (GSA 17 and GSA18, see the map below), while surveys for *E. minor* will be conducted in 6 marine compartments (Roma, Gaeta, Napoli, Monfalcone, Venezia and Chioggia; GSA 17, GSA 9 and GSA 10, see the map below). Each compartment will be surveyed along regularly spaced transect lines perpendicular to the coast (around 2 mile each other, according to the length of each Compartment). Within each transect line, sampling stations will be settled at fixed distances/depths (0.25 nautical miles for *C. gallina*; every 2 m of depth for *E. minor*) until the presence of clams will be detected (usually at a distance corresponding to 12-14 m of depth for *C. gallina* and 6-8 m for *E. minor*). In each sampling station, an area of around 300 m² will be surveyed (width of cage 3 m x 100 m of tow). At the end of the tow, the cage will be hauled and its contents spilled into a collecting box. The catch of striped clam will be conveyed to a mechanical vibrating sieve, composed of a sieving plane (19 mm holes diameter), while the razor clams will be sorted by hand. All striped venus clams retained by the sieve will be weighed. For each sample, length frequency distribution of clams will be studied. One of the purposes of biological sampling is to study the fraction of juvenile clams. To sample the juveniles striped venus and razor clams, a net bag sampler with small meshes will be mounted inside the dredge. Size frequency distribution of this sample will be also recorded.

3. *For internationally coordinated surveys, describe the participating Member States/vessels and the relevant international group in charge of planning the survey*

Not relevant

4. Where applicable, describe the international task sharing (physical and/or financial) and the cost sharing agreement used

Not relevant

5. Explain where thresholds apply

No threshold.

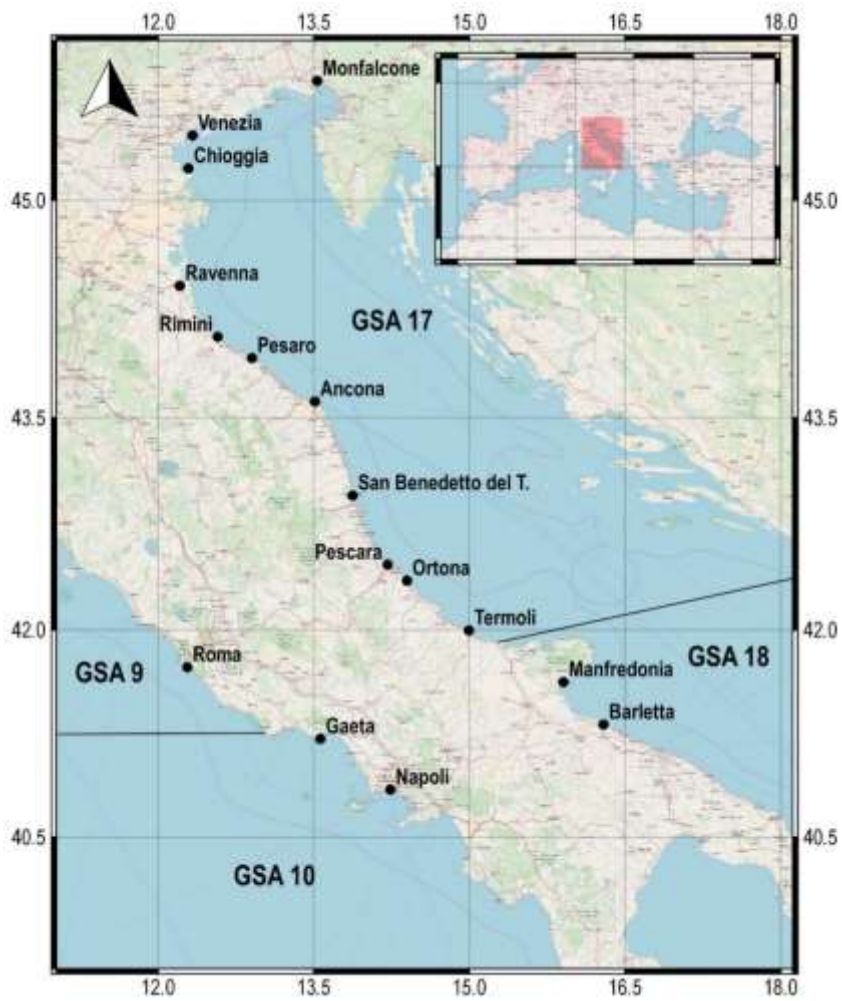


Figure f) DRES survey

(max 450 words per survey)

SECTION 2: FISHING ACTIVITY DATA

Text Box 2A: Fishing activity variables data collection strategy

General comment: This Box fulfills paragraph 4 of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraph (2) point (b) and Article 5 paragraph (2) of this Decision. It is intended to describe the method used to derive estimates on representative samples where data are not to be recorded under Regulation (EU) No 1224/2009 or where data collected under Regulation (EU) No 1224/2009 are not at the right aggregation level for the intended scientific use.

1. Description of methodologies used to cross-validate the different sources of data

The definition of all the fishing trips of the Italian fleet with their associated features is based on a cross-validation procedure of different sources of data.

The procedure considers all available information at the most disaggregated level:

- Fishing fleet register. The fishing technique actually used by each vessel is checked on a quarterly basis. This activity includes: field surveys through the data collectors network used in sample surveys, cross-checking with the information reported in logbooks, VMS data, comparison with previous fleet structures.
- Logbooks and landing declarations. The Control Regulations data are consolidated monthly. Basic and regular checks are implemented on the gear used and on the species caught and landed. These declarative forms are the unique source of information for dredgers, tuna seiners and vessels operating outside the Mediterranean.
- Sales notes data. In addition to fundamental checks on the average price for the species at the highest level of geographical and technical detail, this source of information is also used to validate the data on the quantities landed by species.
- VMS data. The information on the geo localization of the fishing boat are a well established reality and their use covers 95% of the fleet => 15 meters (1600 boats). In addition to providing information about of the effort distribution, they are used as a control tool for the activity through crossing with the logbook declarations and the sample survey. They can also provide information on the gear used, therefore on the metier.
- Sample survey. It is the prevalent source of information for the fleet < 10 meters; sales notes data are also used to cross-checks sample data. The sample survey is also applied to the fleet > 10 m to integrate the information derived from the Control Regulation.
- Data from biological sampling and observing trips. The data derived from biological samples allow to estimate the discards of the main commercial species and estimate the frequency distributions of landing and discards. Furthermore, they provide productivity parameters such as the CPUE that can be used both as a check-control for the information coming from Regulation control and those derived from sampling survey.

Specific procedures are applied to verify the information obtained from the different sources, relating to a same variable (gears, days, catch and price for species), with the goal of identifying and validating the real

figure and get an exhaustive picture of the fishery for scientific purposes.

2. Description of methodologies used to estimate the value of landings

The estimation of value of landings follows the same approach applied for the estimation of volume of landings and of fishing effort. Methodologies are described under points 1 (Description of methodologies used to cross-validate the different sources of data) and point 4 (Description of methodologies used to plan collection of the complementary data).

3. Description of methodologies used to estimate the average price

For the units of the sampling survey, the price is derived from sales that can be done on different channels: the fish market (one or more), the wholesaler and the retailer. The latter case is common in units of artisanal fisheries. Ultimately, a same species in a same trip can have multiple different prices.

For the data obtained from the logbook, the prices are derived as the crosscheck of the survey data for the same stratum or the same area and from sales notes. Further use of the sales notes is to cross-check the price obtained from the survey.

4. Description of methodologies used to plan collection of the complementary data (sample plan methodology, type of data collected, frequency of collection, etc.)

The target population (universe) is made up of the set landings by the Italian fishing vessels. The sample set unit is the single vessel selected from the official list of the Vessel Register.

The sampling is of a stratified nature in that the fishing vessels of the fleet are divided into homogenous groups based on suitable variables and independent samples are taken from each of these clusters. The optimum sample number per stratum is defined according to Bethel's procedure. This algorithm allows to obtain for each stratum, the optimal sample size, according to the predetermined error level. The error level has been raised to 7%, while in previous years was 4%. However, no loss of quality will result because the increase in the level of error will be compensated by the integration with the control regulation data.

The vessels are selected using PPS methodology (Probability Proportional to Size) and, to be more exact, using the algorithm of Hanurav-Vijayan.

Following the random extraction of vessels to be studied, the list is submitted to the network of data collectors that are selected professionals in the world of fishing and who have working relationships with the trade associations. They can easily get in touch with the owners of the ships and are usually present on landing. Primary data are collected and transmitted by means of specific software that works via the web.

The Horvitz-Thomson estimator is used to obtain an estimate of totals per stratum, while the Sen-Yates-Grundy formula is used to estimate the relative sampling error. The estimate phase is preceded by a set of control and correction procedures of sample data to guarantee results with a determined level of quality.

(max 900 words per Region)

SECTION 3: ECONOMIC AND SOCIAL DATA

Text Box 3A: Population segments for collection of economic and social data for fisheries

General comment: This Box fulfills paragraph 5 points (a) and (b) of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraphs (1), (2) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Tables 5(A) and 6 of the multi-annual Union programme.

Supra region: Mediterranean and Black Sea

1. Description of methodologies used to choose the different sources of data

Data sources will depend on the different types of data collection that will be used to collect the variables listed in table 5A of the EUMAP (see paragraph 2). In particular, data sources will be the followings:

- The Fleet Register will be used for the number of fishing enterprises and for variables related to the fleet (number of vessels, mean LOA of vessels, vessel's tonnage, etc.)
- Fleet register and ad hoc questionnaires will be used for estimating consumption of fixed capital and value of physical capital
- Accounts will be used for financial position
- Official administrative records will be used for reporting operating subsidies and subsidies on investments
- Ad hoc electronic questionnaires will be used to collect the rest of the variables listed in table 5A of EUMAP from the sample units of the survey described in paragraph 4.

2. Description of methodologies used to choose the different types of data collection

Different methodologies and data sources will be used to collect the variables listed in Table 5A of the EUMAP, as reported below:

- A probability sample survey will be implemented to estimate the following variables:
 - o Income (Income from leasing out quota, Other income)
 - o Labour costs (Personnel costs, Value of unpaid labour)
 - o Energy costs and energy consumption
 - o Repair and maintenance costs
 - o Other operating costs (Variable costs, Non variable costs, Lease/rental payments for quota or other fishing rights)
 - o Value of quota and other fishing rights
 - o Investments in tangible assets, net
 - o Employment (Engaged crew, Unpaid labour, Total hours per year)
- Gross value of landings and production value per species (Value of landings per species, Average price per species) and fleet variables will be collected as explained under text box 2A and table 2A.

- Subsidies and number of fishing enterprises will be collected through a census.
- Financial position will be estimated through a non probability sample survey.
- Value of physical capital and consumption of fixed capital will be estimated through an indirect survey based on PIM (Perpetual Inventory Method).

3. Description of methodologies used to choose sampling frame and allocation scheme

The population will be all active and inactive vessels registered in the Union Fishing Fleet Register as defined in Commission Regulation (EC) No 26/2004 on 31 December of the reporting year and vessels that do not appear on the Register at that date but have fished at least one day during the reporting year.

The fleet will be segmented into homogeneous groups of vessels as defined by table 5B of EUMAP, according to the prevalent fishing technique and in line with the results of section 2A (fishing activity). A further segmentation of the fleet based on a geographical criterion (combinations of administrative region and FAO geographical sub-area (GSA)) will be used in the sampling design to improve the representativeness of the sample. This level of stratification may generate very small strata that have to be clustered to ensure statistical confidentiality and in order to design a statistically sound sampling plan. Such a clustering scheme will be consistent with previous years and will be maintained constant over time.

The sample size and its allocation among strata will be carried out by using the software MAUSS-R, Multivariate Allocation of Units in Sampling Surveys, developed by ISTAT (Italian National Institute of Statistics). MAUSS allows to minimize the sample size according to maximum accepted sampling errors of target estimates for each stratum. The selected parameters for the estimation of the sample size and its allocation will be: wages and salaries of crew, energy costs, repair and maintenance costs, variable costs, non-variable costs. See table 5B for further references.

4. Description of methodologies used for estimation procedures

Primary data referred to year n will be collected in year $n+1$ through the sample survey and will be subjected to: a) a control process, b) correction of outliers and estimation of missing data, c) elaborations for the estimation of the final variables requested by table 5A of EUMAP. These activities will be carried out through an interactive web application specifically developed for the statistical analysis of primary economic data for fisheries.

The control process of primary data will consist of the following steps:

- identification of outliers on absolute values;
- identification of outliers on mean values;
- evaluation of the costs structure;
- comparison with benchmark data.

The final set of primary data resulting from corrections and imputation of non-response will be expanded to the population. The raising factors will be calculated through the Horvitz - Thompson estimator, while the

formula of Sen-Yates-Grundy will be used to estimate the sampling errors. Detailed methodology is available on: <http://dcf-italia.cnr.it/main/docs/14>.

The value of capital and capital costs will be estimated according the PIM, which is based on the specification of the composition of the active fleet by age and on the estimation of price per GT. The price per unit of capacity will be estimated having in mind the price for building new vessels (replacement values).

Assumptions for application of the PIM are available on: <http://dcf-italia.cnr.it/main/docs/14>.

The estimation of data on subsidies will be based on the official lists provided by national and regional administrations. These lists will be further processed to consider only payments that can be classified as operating subsidies and subsidies on investments. Each payment will be associated with one vessel. This link will allow to report subsidies in fleet segments.

The estimation of financial position will be based on accounts for vessels belonging to companies which are obliged to publish financial statements. This information will be further integrated with data based on direct interviews to vessels which are not subject to the publication of balance sheets.

5. Description of methodologies used on data quality

Three main methodologies will be applied to get consistent results for socio-economic parameters:

- monitoring of data collectors through field visits: to train data collectors and to ascertain what kind of contacts data collectors has established with operators;
- statistical control: identification of the main anomalies, outliers and missing data and analysis of consistency over time and with regards to “benchmark” parameters;
- cross-checks with other data sources: activity data, VMS, balance sheet data

Finally, coefficient of variations (cv) will be calculated for the final estimates through a specific statistical tool.

Italian software and methodologies used for statistical control of primary data and for the estimation procedures (e.g. the R scripts) have been presented at the 5th Planning Group on Economic Issues and are available on: <http://dcf-italia.cnr.it/main/docs/14>.

Other regions

1. Description of methodologies used to choose the different sources of data

The Italian Fleet Register includes 9 vessels with a license to operate outside the Mediterranean waters. The activity of these vessels depends on fisheries agreements in place and may vary every year.

The data source for the collection of the economic data will be the Economic&Loss Reports and the Balance Sheets.

2. *Description of methodologies used to choose the different types of data collection*

Economic data for the fleet operating in “other regions” will be collected through a census.

3. *Description of methodologies used to choose sampling frame and allocation scheme*

The accounts and balance sheets of all the vessels that will result from official information that have fished outside the Mediterranean Sea will be collected and analysed.

For inactive vessels value of capital and consumption of fixed capital will be collected.

Economic data will be provided at the level of fleet segment. If the fleet segments will be composed by less than 2 vessels, economic data will be collected but not published for confidentiality reasons.

4. *Description of methodologies used for estimation procedures*

The aim of the survey is to get exhaustive information for all vessels.

5. *Description of methodologies used on data quality*

The data source will be the Profit and Loss Accounts and Balance Sheets. However, operators will be also contacted to ensure a precise alignment between accounting data and variables listed in table 5A of the EUMAP.

Response rate will be provided for each variable of table 5 of EUMAP as an indicator to assess the quality of final estimates.

(max 900 words per Region)

SECTION 3: ECONOMIC AND SOCIAL DATA

Pilot Study 3: Data on employment by education level and nationality

General comment: This Box fulfills paragraph 5 point (b) and paragraph 6 point (b) of Chapter III of the multi-annual Union programme and Article 2 and Article 3 paragraph (3) point (c) of this Decision. It is intended to specify data to be collected under Table 6 of the multi-annual Union programme.

1. Aim of pilot study

Social variables as indicated in Table 6 of EUMAP will be collected every three years starting from 2018.

The pilot study will cover: the fishing sector, marine and freshwater aquaculture and processing industry.

In 2017 a pilot study will be implemented to:

- precisely define the variables listed in table 6 of EUMAP
- suggest a sound methodological approach to collect the social variables
- test the methodology in selected case studies (2 case studies for the fleet, 1 case study for the aquaculture, 1 case study for the processing sector)

2. Duration of pilot study

The pilot study will be implemented in 2017. Main results will be presented in relevant expert working groups (PGCON).

3. Methodology and expected outcomes of pilot study

The methodology will be based on a mixed-method approach to collect primary information that includes semi-structured interviews to be implemented through focus groups with key local informants in the community and fishing/aquaculture/processing sector together with targeted questionnaires. Secondary data at the national and local levels will be also used to provide additional demographic data and to evaluate trends in employment profile.

In particular, the pilot study will consider the following steps:

1. review of the available literature in social surveys and investigation on the information already available in official administrations and at the national statistical institute.
2. focus groups and interviews with key local informants in the community to prepare the questionnaire and to highlight the main problems related to the collection of social data
3. selection of case studies on the basis of socio economic importance of the fisheries/aquaculture/processing sector within the Italian context and links to other economic sectors (2 case studies for

the fleet, 1 case study for the aquaculture, 1 case study for the processing sector).

4. collection of data in the case studies applying a stratified sampling surveys. Sampling will be implemented through the questionnaires set up in step 1. The sample will include representatives from different segments and various employee-types within the segment. The stratification of groups prevents bias, and the selection of key informants is considered appropriate to ensure that the people with sufficient knowledge of the subject area will be involved.

5. data processing according to statistical procedures and analysis of the results.

Expected outcomes of the study are mainly aimed at producing consistent and comparable social variables, definitions and methods of data collection to be applied in 2018.

(max 900 words)

SECTION 3: ECONOMIC AND SOCIAL DATA

Text Box 3B: Population segments for collection of economic and social data for aquaculture

General comment: This Box fulfills paragraph 6 points (a) and (b) of Chapter III of the multi-annual Union programme and Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Tables 6 and 7 of the multi-annual Union programme.

1. Description of methodologies used to choose the different sources of data

The main data sources will be the annual financial statements of companies in the aquaculture sector that will enable the collection of the variables requested by table 7 of EUMAP.

Economic data will be collected from the analysis of accounts and financial statements, but also through direct contacts with businesses to ensure perfect alignment between the accounting data and variables required by table 7 of EUMAP.

2. Description of methodologies used to choose the different types of data collection

All the economical parameters will be estimated through a “Probability Sample Survey” in which the sample will be randomly selected from the universe of aquaculture firms.

3. Description of methodologies used to choose sampling frame and allocation scheme

Economic data will be collected for the aquaculture sector as defined by EU Reg. 1380/13 and the population will be defined according to EUMAP (enterprises whose primary activity is defined according to the European classification of economic activities NACE (1) codes 03.21 and 03.22 and who operate for profit).

The sample frame and the allocation scheme will be derived from the Eurostat survey implemented according to REG CE n. 762/2008.

The optimum sample number per stratum is defined according to Bethel’s procedure, that is a mathematical algorithm to achieve the optimum sample allocation in a multivariate sample survey.

Information will be collected through the choice of a representative sample per single productive segment, with a random selection. Once selected the firm sample per productive segment it will also be possible to substitute a single firm if necessary.

No social and economic data on aquaculture will be collected for species accounting for less than 10 % of the Italian aquaculture production by volume and value.

4. Description of methodologies used for estimation procedures

To obtain the estimates of the totals per stratum, the Horvitz-Thompson formula will be used, derived for the particular case of the simple random sampling without replacement. According to this particular estimator, the variance and the CV will be calculated to evaluate the precision level.

Additional information is available on: <http://dcf-italia.cnr.it/main/docs/14>.

5. Description of methodologies used on data quality

Accuracy indicators will be calculated to provide information on the quality of the collected data, for each variable. In particular, information on data quality will be given in terms of target precision levels and coverage rates. The estimation of the variance for the calculation of the CV will be also provided.

The phase of controlling and correcting data consists in identifying and treating errors present in the primary data, in the aim of guaranteeing final results with specified levels of quality.

Additional information is available on: <http://dcf-italia.cnr.it/main/docs/14>.

(max 1000 words)

SECTION 3: ECONOMIC AND SOCIAL DATA

Pilot Study 4: Environmental data on aquaculture

General comment: This Box fulfills paragraph 6 point (c) of Chapter III of the multi-annual Union programme and Article 2 and Article 4 paragraph (3) point (d) of this Decision. It is intended to specify data to be collected under Table 8 of the multi-annual Union programme.

1. Aim of pilot study

The aim of the pilot study is to assess the feasibility to provide the environmental data on aquaculture as indicated in Table 8 of EUMAP to enable the assessment of aspects of its environmental performance.

Environmental data may be collected on the basis of pilot studies and extrapolated to indicate totals relevant to the total volume of fish produced in the Member State.

2. Duration of pilot study

The pilot study will be implemented in 2017.

Environmental data will be collected every two years starting in 2018.

3. Methodology and expected outcomes of pilot study

According to EUMAP, the variables to be collected are:

- medicines or treatments administered, by type, extrapolated from data recorded under Annex I, point 8(b), of Regulation (EC) No 852/2004 of the European Parliament and of the Council
- mortalities, extrapolated as a percentage of national production from data recorded under Council Directive 2006/88/EC, Article 8, Paragraph 1(b).

A sub sample of the one used to collect economic data for the aquaculture sector will be extracted.

This sub sample will be defined in a way which enable to cover all the segments reported in table 9 (Segmentation to be applied for the collection of aquaculture data) of EUMAP and for which the economic survey will be implemented.

An additional questionnaire will be prepared and administered to the selected sampling units.

The questionnaire will be divided into two sections:

- 1st section: qualitative information:
 - o procedures adopted by the enterprises to record the data requested by Regulation (EC) No 852/2004 and by Council Directive 2006/88/EC

- o who is responsible for the registration of these data
- o how these data are recorded (electronic files, paper registers, ecc.)
- o the availability to provide this data for the purpose of the EUMAP

- 2nd section: quantitative information:
 - o medicines or treatments administered, by type, in grams
 - o mortalities, per cent

Answers to the questionnaires will then be analyzed and answers will be assessed to achieve suitable results for the actual data collection to be implemented in 2018.

(max 900 words)

SECTION 3: ECONOMIC AND SOCIAL DATA

Text Box 3C: Population segments for collection of economic and social data for the processing industry

General comment: This Box fulfills footnote 6 of paragraph 1.1(d) of Chapter III of the multi-annual Union programme, Article 2, Article 4 paragraphs (1) and (5) and Article 5 paragraph (2) of this Decision. It is intended to specify data to be collected under Table 11 of the multi-annual Union programme.

1. Description of methodologies used to choose the different sources of data

In Italy the fish processing sector is part of the industry, manufacturing sector with NACE code 10.20 (fish processing activity). Structural Business Statistics (SBS) data for the 10.20 activity sector will be used for providing data on industries having more than 10 employees and exerting fish processing as main activity. SBS data as requested by Reg. CE 295/2008 are collected by ISTAT, the Italian Statistical Institute and provided to ESTAT.

For those variables not directly provided under SBS (e.g. other incomes, value of unpaid labour, other operational costs, operating subsidies, consumption of fixed capital and unpaid labour ad-hoc indirect surveys will be carried out on SBS data or on official data (collected under other national surveys) or by mean of ad-hoc surveys where data are completely unavailable (debt and total value of assets).

In line with the provisions of EUMAP, economic data for enterprises with less than 10 employees, representing in 2014, 75% of the whole sector, will be collected through the implementation of a specific survey. The main data sources will be enterprises' registers and the official balance sheets of these companies for the main income and costs data.

Subsidies on investments will be collected by using the main administrative sources (e.g. funds allocated under EMFF). Taking into account that this variable is collected starting with this new data collection program, it is still unclear if this variable could be provided by different employment segments (<10 and >10).

In order to collect all the economic data on employment for the segment <10 employee, enterprises' registers will be cross-checked with other national registers (e.g. labour registers) for providing the main economic data on employment (including the social and economic data on FTE national).

As far as the social data related to employment, data will be collect for the whole sector every three years. The main data sources (e.g. labour registers, ad hoc questionnaires and SBS data) will be cross-checked and used for providing the variable listed under Table 11 of EUMAP.

The main economic variables (e.g. turnover and number of enterprise) will be collected also for enterprises exerting the fish processing activity as secondary activity. The main data sources will be enterprises' register for the number and balance sheets and interviews for turnover attributed to fish processing activity.

The national program foresees the collection of data on raw material in weight, by species and origin, for the whole sector. Data will be collected by mean of questionnaires and interviews submitted to selected industries

(according to the representativeness) every three years starting in 2018. Meetings with the industry representatives will help to select industries and collect data.

2. Description of methodologies used to choose the different types of data collection

The already existing data collection surveys by ISTAT are well established and provide validated time series. The surveys used to collect data under SBS and provided to ESTAT refer to a) small and medium enterprises (PMI survey) and large enterprises (SCI survey). Quality reports on both the surveys are available on request or already on the ISTAT website.

Economic data for the segment <10 will be collected by mean of an ad-hoc survey.

The collection of social data on employment will be explored by mean of a pilot study in 2017 whose aim will be to cross-check labour register's data and data collected by mean of ad-hoc questionnaires. The final data collection scheme will be based on the pilot study and will start in 2018.

For the volume of raw material by species and origin no such regular collection scheme is established, so a pilot study will be conducted in 2018.

3. Description of methodologies used to choose sampling frame and allocation scheme

Where data are already covered by national official data collection (e.g. SBS data), sampling frame and allocation scheme are defined according to the specific methodologies under those surveys (PIM and SCI) implemented by ISTAT and whose details are available in official reports and website (www.istat.it/en/tools/methods-and-it-tools).

For the data collection conducted by mean of ad-hoc surveys the sampling frames will be defined according to the surveys already implemented under the data collection framework since 2006.

4. Description of methodologies used for estimation procedures

For economic and social variable collected through a census no estimation procedure is necessary and past experience shows no problems with non-response.

In case of economic data gained through sample standard statistic parameters will be applied to raise the values to the overall population.

For the pilot studies on social variables and on raw material volume the procedures to estimate the totals will depend on the results of the planned studies and on data availability.

5. Description of methodologies used on data quality

The quality of data for those data covered by official statistics is ensured by the fact that data on fish processing industry are collected by ISTAT under European SBS standards.

For data obtained by estimation on national registers, large errors are not expected.

The quality of data collected by mean of ad-hoc survey will be ensured by applying sound statistical approaches and providing data on coverage rates and coefficient of variation.

As far as the pilot study on raw material, as answering to this questionnaire is not mandatory for the companies, a low response rate is to be taken into account. As a consequence, the data collection will be complemented and anticipated by communication strategies in advance (announcements in fish sector magazines, personally introduction of the project to the association of fish processors) as well as mail reminder. Quality will be assessed by response rate and the sampling errors will be expressed by the main quality and accuracy indicators wherever possible (e.g. standard error and/or coefficient of variation).

(max 1000 words)

SECTION 4: SAMPLING STRATEGY FOR BIOLOGICAL DATA FROM COMMERCIAL FISHERIES

Text Box 4A: Sampling plan description for biological data

General Comment: This Box fulfills Article 3, Article 4 paragraph (4) and Article 8 of this Decision and forms the basis for the fulfilment of paragraph 2 point (a)(i) of Chapter III of the multi-annual Union programme. This Table refers to data to be collected under Tables 1(A), 1(B) and 1(C) of the multi-annual Union programme.

REGION: Mediterranean Sea and Black Sea

In order to ensure congruency along the data series, Italy will report data by metiers as recommended by RCMMed&BS-LP 2016, and as defined by EU Decision 1251/2016 under Chapter III (data requirements), paragraph 2(a) requesting catch data at the aggregation level 6 (corresponding to mesh size). The reference list of metiers is being reproduced in RCM MED&BS-LP 2016 report for ease of reference. With the exception of the metier targeting large pelagic and eel, all the collection and analysis of data will be performed and reported at GSA level (<http://www.fao.org/gfcm/data/map-geographical-subareas/en/>). Sampling will be performed in order to evaluate the quarterly length distribution of species in the catches, and the quarterly volume of discards.

Tables 1A, 1B and 1C

RCMMed&BS-LP 2016 agreed that stratification of stocks for data collection should follow the structure followed in the previous years (Group 1, 2 and 3 species, EU Decision 93/2010), which is also in line with the approach, and the spatial stratification, as identified in the adopted GFCM-Data Collection Reference Framework (GFCM-DCRF, 2016).

Table 1A - Each line in Table 1A cannot correspond to one stock because in the current column namely 'Area/Stock' it is present the FAO division (but in the Med&BS, stock assessment and fisheries management are carried out by Geographical Sub-Areas GSA of the GFCM). So, as agreed at RCMMed&BS-LP 2016, in the 'Comments' column it has been inserted the Relevant GSA/s in which the species occurred and for which biological sampling will be carried out. The identified GSA it has been correctly reported in Table 1B and 1C.

Average landing data and share in EU landing have been obtained from the RCMMed&BS-LP 2016 report. Should be underlined that for some species (i.e. *Lophius* spp., *Mullus* spp., *Trachurus* spp., *Eledone* spp. and *Mugilidae*), due to inaccurate species identification, the share (%) in EU landings might be not precise.

Table 1B - Length data should be collected and reported yearly for all the three identified group of species. Other biological parameters (i.e. sex, age, maturity, weight) shall be collected and reported yearly for Group 1 species (GFCM-DCRF Appendix A.1), whereas, for all Group 2 species (and for *Anguilla Anguilla*), sex, age, maturity and weight, should be reported every three years (as requested by GFCM-DCRF Appendix A.2).

Furthermore, if a species it is presents in Groups 1, 2 and 3 of the GFCM-DCRF (Appendixes A) and it is

absent from the tables of the EUMAP this species should be included in the sampling plan.

Table 1C - RCMed&BS-LP 2016 agreed that, for 2017, the number of demersal and small pelagic individuals to be sampled should be decided by the MS based on previous sampling knowledge. For the future, the optimum number of individuals required for biological data sampling will be calculated using the tool devised by the project Strengthening regional cooperation in the area of fisheries data collection in the Med&BS (MARE/2014/19- SI2.705484).

Concerning large pelagic species, length data should be reported yearly. Sex, age, maturity and weight should be reported in accordance with the end-user needs and coordinated at regional level (Table 1B). With regard to the number of individuals to be sampled for large pelagic (Table 1C), the RCM-LP is currently working on devising an appropriate tool to calculate the optimum number of individuals to be sampled. As this tool is not available yet, the same number of individuals, as regionally agreed by each country for the previous triennial period, is to be retained (see updated table in the RCM MED&BS-LP 2016 report).

Regarding sharks, it should be underlined that most of the proposed species reported both in Tables C and D of the EU Dec. 1251/2016, and in the Appendix A.3 of the GFCM-DCRF, are rare and with a sporadic and not confirmed presence in the Mediterranean area. For this reason, during the RCMed&BS, it has been decided that no planned minimum number and sampling strategy should be associated to the collection of “sharks” species. All species (in tables C and D of EUMAP will be collected concurrently only for length without any ad hoc planning sampling.

In the Italian WP, only for the four most abundant species (i.e. *R. clavata*, *R. asterias*, *R. miraletus* as commercial species and *G. melastomus* as bycatch species) there will be a sampling programme associated.

For all other sharks’ species, biological information, such as sex, age, weight and maturity, will be collected and reported when available, through the research surveys at sea.

Concerning eel, each year 60 individuals (30 for each stage, yellow and silver) from the most productive site in each EMU will be collected. In order to minimize sacrifice of individuals photographs will be collected and measures will be obtained by the software opensource TPSdig (Rolf, 1990

<http://life.bio.sunysb.edu/ee/rohlf/software.html>). Every third year, 60 individuals (30 for each stage, yellow and silver) from the most productive site in each EMU will be collected and sacrificed in order to proceed to collection of variables such as sex and age.

Tables 4A, 4B and 4C

In order to identify the metiers to be sampled, the ranking system at GSA level, as described in the GFCM-DCRF (2016), has been applied. For sampling purpose, only the major metier will be considered. Official statistics (landings, effort and value data) have been used to apply the ranking system. Sampling strategies in each GSA will be a mix of concurrency-at-sea (sampling directly on board by observers and scientists) and concurrency-at-landing site (sampling directly on landing site, at market etc.).

The target population for the reference year will be the number of fishing trips by metier of the previous years. Fishing trip should be considered equal to fishing day. The frame population is a subsample of the target

population: it will be a selection of fishing trips, mainly on spatial (GSA) and time stratification basis (quarterly) with measurements of the composition of the catch in order to detect seasonal differences in the demographic structure and composition of the landings for different metier. The sampling will be accomplished according to the methods of a two-stage stratified random sampling: the sampling unit belonging to the metier (primary unit) will be the fishing trip (secondary unit). The number of fishing days to be sampled has been defined proportionally to the effort (number of days at sea for each metier) and the landings.

With regard discards sampling, Italy will follow the discard sampling program as recommended by RCM Med&BS-LP 2016 (see updated table in the RCM MED&BS-LP report).

Concerning hydraulic and boat dredges for molluscs (Veneridae), Management Plans are implemented in Italy. Based on these plan, the collection of biological variables (i.e. length, sex, maturity, weight and age) will be implemented for each Management Consortium for the main target species in this fishery: *Chamelea gallina* (main target species), *Callista chione* and *Ensis minor*.

Finally, concerning the establishment of a recovery plan on Mediterranean swordfish, the workplane already includes the collection of adequate scientific information for highly migratory pelagic species in the Mediterranean. The recovery plan on Mediterranean swordfish requests the collection of additional specific information related to fishing activities and specific data on the catches, in the smallest time-area possible. The sampling schemes already planned will be adapted in order to reach the level of details requested by the recovery plan on Mediterranean swordfish.

A summary of the methodologies applied for the estimation of demography of landings, discards, the calculation of growth and reproduction parameters, and the related precision levels, it is provided under the following link <http://dcf-italia.cnr.it/main/docs/14>.

REGION: Other regions

The Italian Fleet Register includes 9 vessels with a license to operate outside the Mediterranean waters. The activity of these vessels depends on fisheries agreements in place and may vary every year.

Till now there has been no requirement for Italy to sample these two fisheries, as they were sufficiently covered by the Spanish sampling program (report RCM LDF, Constanta, 2013: “Based on this information and providing that these proportions of landings and effort for the above metiers do not significantly change over the next years, there is no requirement for Italy to sample these fisheries”).

Available landing and effort data of these vessels operating both in the CECAF and IOTC areas will be sent to the RCM Long Distance Fishery. Up to now, no biological sampling has been implemented for those vessels, they only have a national obligation to fulfil logbooks. Italy will be considered further recommendations of the RCM long distance fisheries.

(max 900 words per Region)